6. The combination, with the engine-cylinder open at one end, of a piston provided with an air-inlet valve, a burner arranged within the cylinder near the closed end thereof, a receiving-chamber arranged at the closed end of the cylinder and having a spray-nozzle within the cylinder near the burner, conduits for oil and compressed air entering said chamber, and a valve which is opened at intervals for discharging the oil from said chamber, substantially as set forth.

7. The combination, with the engine-cylinder provided at one end with an oil-receiving chamber and a spray-pipe extending from said chamber into the cylinder, of an exhaust-passage through which said spray-pipe extends, and an exhaust-valve which is seated in said passage and which surrounds said spray-pipe, substantially as set forth.

8. The combination, with the engine-cylinder provided at one end with an oil-receiving chamber and having a spray-pipe extending into the cylinder, of an exhaust-passage in which said spray-pipe is arranged, an exhaust-valve surrounding said spray-pipe and seated in said passage, a discharge-valve arranged in the oil-receiving chamber, and an actuating-lever connected with both valves, substantially as set forth.

9. The combination, with the engine-cylinder and the burner arranged therein, of an oil-supply pipe extending into the cylinder and provided on one side of the burner with a spray-nozzle and on the opposite side of said burner with a vaporizing-shield, substantially as set forth.

10. The combination, with the hollow base provided with an unobstructed opening, through which the external air can freely enter said base, of an engine-cylinder connected with its open end to said base, a piston provided with an air-inlet and valve, through which air is taken from the hollow base into the cylinder, an oil-supply conduit and valve arranged at the upper end of the cylinder, and a burner arranged within the cylinder, whereby the open base is ventilated into the engine-cylinder, substantially as set forth.

11. The combination, with the engine-cylinder provided with a fuel-supply valve and an exhaust-valve, of an actuating-lever connected with both valves and a rotating cam and pin, whereby said lever is moved three times in succession for every two revolutions of the engine-shaft, the first movement opening the exhaust-valve partly and discharging the surplus air, the next movement opening the fuel-supply valve, and the last movement opening the exhaust-valve for discharging the products of combustion, substantially as set forth.

12. A burner composed of a shell provided with an oil and air supply, an absorbent packing arranged in said shell, a perforated plate for holding said packing in place, and an incandescent medium for preserving the flame, substantially as set forth.

13. The combination, with the burner and the passage through which oil is supplied thereto, of a wick arranged in said passage and an air-jet device, whereby a spray of oil is delivered on said wick, substantially as set forth.

14. The combination, with the burner and the passage through which oil is supplied thereto, of a wick arranged in said passage, an oil-reservoir, and a blast-pipe arranged in said reservoir and provided with inlets through which the oil enters said pipe, substantially as set forth.

15. The combination, with the burner and the passage through which oil is supplied thereto, of an oil-reservoir communicating at its upper end with said passage, a wick arranged at the upper end of said reservoir and entering said passage, a branch passage whereby air is conducted from the upper portion of said reservoir past the wick into the passage leading to the burner, and a blast-pipe arranged in the lower portion of the reservoir and provided with inlets for the oil, substantially as set forth.

Witness my hand this 1st day of January, 1890.

GEORGE B. BRAYTON.

Witnesses:
CHAS. C. KURTZ,
ALBERT G. HALL.